CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 90-114

SITE CLEANUP REQUIREMENTS FOR:
PETERBILT MOTORS COMPANY
38801 CHERRY STREET
NEWARK, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the "Board") finds that:

1. SITE DESCRIPTION: Peterbilt Motors Company (hereinafter called the Discharger) operated a truck manufacturing plant at 38801 Cherry Street in Newark, California from 1962 until October of 1986. At this 36 acre site, chemicals which were stored and/or used include diesel fuel, gasoline, organic solvents, paints, and other organic chemicals.

2. HYDROGEOLOGY: The known groundwater at the Site consists of a shallow water bearing zone (shallow zone) and the Newark Aquifer. These water bearing zones are separated by a sequence of silt and clay known as the Newark Aquitard. The shallow zone is generally heterogeneous and anisotropic, and consists of interbeds of sand, silt, and clay. The shallow zone extends from the surface to a depth of approximately 37 feet. The Discharger has determined that at this Site the shallow zone consists of an upper and a lower zone with different hydrologic characteristics. These two zones are separated by silty clay. However, as pollutants have been found in both of these zones hydrogeologic communication is assumed to be present. At the Site the Newark Aquitard extends from the base of the shallow zone to a depth of approximately 58 feet. The Newark Aquifer extends from the base of the Newark Aquitard to a depth of about 68 feet, with a lower portion of the aquifer from approximately 82 to 89 feet. In the vicinity of the Site, and for some distance eastward, the Newark Aquifer is saline. Further eastward the Newark Aquifer contains freshwater which is currently used for domestic and industrial purposes. The general regional gradient of the Newark Aquifer is westward toward the San Francisco Bay; that is, from the freshwater zones in the east toward the saline zones in the west. Much of the salinity in the western parts of the Newark Aquifer, at the Site, is the result of saltwater intrusion due to past overdrafting for domestic and industrial use. The deeper Centerville and Fremont aquifers are believed to exist in the vicinity of the Site, but their presence at the Site has not been verified.

3. SUBSURFACE INVESTIGATION: The Discharger has been investigating hydrogeologic conditions as well as the lateral and vertical extent of on-site soil and groundwater pollution in accordance with plans accepted by the Board staff. The Discharger has been cooperating with the Board staff and has prepared numerous reports on the hydrogeologic conditions at the Site. Soil and groundwater investigations have been concerned with the following main areas:

A) Surface Impoundment Area - In March of 1984 three waste evaporation ponds were certified by the Discharger to be clean closed. All contents of the ponds were taken to a Class I disposal site. Closure was subsequently approved by the Department of Health Services (DOHS) and the Board.

B) Underground tank Area - Seven underground tanks were located at the Site, four for product storage and three for waste storage. The tanks were emptied and abandoned in 1974. In 1987 the tanks were removed. Soil and groundwater investigations relating to the underground tanks was initiated in 1983. The investigations have defined the shallow zone pollution plume in portions of the Site. However, additional pollutant characterization and hydrogeologic investigations are necessary to complete the characterization of the shallow zone.

C) Hydraulic Lift Pit Area - The hydraulic lift pit area is located in the south-central portion of the Assembly Plant Building. The pit housed a pair of hydraulic lifts which were used to elevate trucks during assembly. The hydraulic lift pit area was decommissioned during the fall of 1986. During the decommissioning, stained soil was observed. The Discharger excavated the stained soil to near the bounds of the original pit, but stopped when it appeared that the staining went beyond these bounds, and that further excavation might threaten the stability of the building. Soil analysis showed hydraulic oil and diesel present at concentrations to 9300 ppm at a depth of 7 feet below the pit bottom, and about 70 ppm at a depth of 10 feet below the pit bottom. Further investigations are needed to fully define the horizontal and vertical extent of these pollutants in the shallow zone soil and groundwater.

D) Hazardous Waste Treatment (HWT) and Drum Storage Areas (DSA) - The HWT area was used to treat rinsate byproduct, and other process waters prior to disposal. During closure of these areas low concentrations (4 - 30 ppb) of organic chemicals were found in a water sample from DSA #2. In August of 1987 the Discharger certified that these areas were closed, and hazardous materials had been removed. In September of 1988 DOHS subsequently approved the closure, with the stipulation that the

Discharger should work with the Board to further investigate this area and clean it up. Further investigations in the DSA is needed.

In the shallow zone pollutants are believed to have been a result of leaking underground tanks, breaks in underground pipelines, and leaking equipment. Chemical compounds found as a result of the investigations include benzene, 1,1-dichloroethylene, 1,2-trans-dichloroethylene, methylene chloride, toluene, 1,1,1-trichloroethane, 1,2-dichloroethane, ethyl benzene, and trichloroethene. An additional soil investigation, and possible groundwater investigation and cleanup, is required for the pipeline and loading dock area.

Pollutants have also been found in the Newark Aquifer during limited sampling prior to August 1986. Periodic sampling conducted since that time has not revealed any pollutants in the Newark Aquifer wells at the Site. The mechanism for potential pollution of the Newark Aquifer has not been positively identified but the Discharger has suggested that it may have been a result of poor water quality sampling techniques during sampling. Other possible ways that pollutants may have migrated to the Newark Aquifer may be related to inadequate Newark Aquifer well construction and/or discontinuous hydraulic interconnection between the shallow zone and the Newark Aquifer, or other mechanisms. Releases from other nearby sources may have caused the Newark Aquifer pollution. Chemical compounds initially found in the Newark Aquifer include 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,1,1-trichloroethane, toluene, methylene chloride, tetrachloroethylene, trichloroethene. However, subsequent water quality analyses indicated non-detectable levels of pollutants. Additional hydrogeologic monitoring is warranted in the Newark Aquifer.

4. INTERIM REMEDIAL ACTIONS: In the underground tank area and the hydraulic lift area, the Discharger has removed soils which contain elevated levels of pollutants. The Discharger has recently completed a pilot program for insitu bioremediation for shallow zone pollutants associated with the underground storage tank areas. As part of the pilot program the Discharger was required to submit regular reports documenting the progress and operation of the system. A final report was issued in June 1990 in which conclusions and recommendations are made for full scale application. For the hydraulic lift area the Discharger has proposed further remedial measures consisting of additional soil removal and removal of product from the groundwater surface. This action was approved by Board letter dated November, 1989. These remedial actions are scheduled to be implemented in August 1990.

5. SALINITY BARRIER PROJECT: The Alameda County Water District (ACWD) is in the process of implementing a Salinity Barrier Project (SBP) which will withdraw saline water from the Newark Aquifer. The SBP is a line of extraction

wells which serve two functions: first, under pumping operation, the wells will create a hydraulic trough along the bay to prevent the intrusion of saline water into potable aquifers during dry periods when groundwater levels are below sea level; second, the SBP will cause freshwater from the eastern recharge zones of the Newark Aquifer to migrate towards the SBP wells, enabling domestic and industrial use of groundwater to resume in portions of the Newark Aquifer which are now saline. It is planned that all water in the Newark Aquifer east of the SBP wells will be fresh. The Site is east of the SBP wells as currently designed. Implementation of the SBP near the Site may accelerate the migration of pollutants both horizontally within the Newark Aquifer (if any are present) and vertically from the shallow zone to the Newark Aquifer. In the absence of actions to prevent it, pollutants could migrate to the SBP extraction wells, possibly requiring cleanup of the groundwater prior to the planned surface discharge. Although unlikely, pollutants may migrate from the shallow zone to surface waters, and/or to the Newark Aquifer, irrespective of actions associated with ACWD's SBP. Proposed surface discharges from the SBP extraction wells would discharge to the South San Francisco Bay by means of existing natural or manmade drainage channels, and/or through other means yet to be proposed (pipeline etc.). It is the intent of the Board to adopt Site Cleanup Orders for those sites affecting the ability of ACWD to implement the SBP.

6. STATE BOARD RESOLUTION 68-16: On October 28, 1968, the State Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California." This policy calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public benefit and not unreasonably affect beneficial uses. The original discharge of waste to the groundwater at this Site was in violation of this policy; therefore, the groundwater quality needs to be restored to its original quality to the extent reasonable. For the purpose of establishing cleanup objectives, the shallow groundwater and the Newark Aquifer at the Site are designated a potential source of drinking water, and protective levels shall be those levels which have been established as protective of drinking water.

7. STATE BOARD RESOLUTION 88-64: On March 30, 1989, the Regional Water Quality Control Board incorporated the State Board Policy of "Sources of Drinking Water" into the Basin Plan. The policy provides for a Municipal and Domestic Supply Designation for all waters of the State with some exceptions. Groundwaters of the State are considered to be suitable or potentially suitable for municipal or domestic supply with the exception of: 1) the total dissolved solids in the groundwater exceed 3000 mg/l, and 2) the water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day. Based on data from the shallow

zone groundwater for the area, the Regional Board finds that neither of these two exceptions apply.

8. SCOPE OF THIS ORDER: This Order contains tasks for completion of groundwater characterization at the Site; implementation and evaluation of interim remedial actions for on-site soil pollution and on-site and off-site groundwater pollution, and evaluation and implementation of final cleanup actions. These tasks are necessary to alleviate the threat to surface and groundwater posed by the migration of pollutants and to provide a substantive technical basis for designing and evaluating the effectiveness of final cleanup alternatives.

9. BASIN PLAN: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) dated December 1986. The Basin Plan contains water quality objectives and beneficial uses for San Francisco Bay and contiguous surface and groundwaters.

10. BENEFICIAL USES - SURFACE WATER: The existing and/or potential beneficial uses of surface waters in the vicinity of the Site include:

    a. Contact and non-contact water recreation
    b. Wildlife habitat
    c. Warm and cold fresh water habitat
    d. Fish migration and spawning

11. BENEFICIAL USES - GROUNDWATER: There is no known current use of the shallow zone and Newark Aquifer groundwater in the vicinity of the Site. The potential beneficial uses of groundwaters in the vicinity of the Site include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and domestic water supply
    d. Agricultural water supply

12. CEQA: This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

13. PUBLIC HEARING: The Board has notified the Discharger and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that Peterbilt Motors Company shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS:

1. DISCHARGE OF WASTE: The discharge of wastes or hazardous materials in a manner which will significantly degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. POLLUTANT MIGRATION THROUGH SUBSURFACE: Significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. POLLUTANT MIGRATION CAUSED BY INVESTIGATIONS: Activities associated with the subsurface investigation and cleanup, that will cause significant adverse migration of pollutants, are prohibited.

B. SPECIFICATIONS:

1. NUISANCE CLAUSE: The treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.

2. REMEDIAL ACTIVITIES: The Discharger shall conduct site investigations, monitoring and remediation activities as needed to define the current local hydrogeologic conditions, to define the lateral and vertical extent of soil and groundwater pollution, and to remediate soil and groundwater pollution. Should monitoring results show evidence of plume migration, additional plume characterization may be required.

3. POTENTIAL CONDUITS: Any wells installed by the Discharger and/or any wells which the Discharger owns, which are identified as potential conduits for the migration of pollutants, shall be properly abandoned. A detailed workplan shall be submitted for review and approval which describes the proposed methods of abandonment for each well identified.

4. CLEANUP GOALS - SOILS: The cleanup for source area soils may be proposed based on site specific data coupled with a risk assessment to human health and the environment. If pollutants are to be left in place, the Discharger must demonstrate that cleanup is not cost effective, and

that left in place pollutants will not threaten the quality of waters of the State, and that human health and the environment are protected. Final cleanup goals for source area soils must be acceptable to the Executive Officer. Pollutants left in place will have to be regularly monitored for their impact on the groundwater.

5. CLEANUP GOALS - GROUNDWATER: Site cleanup levels and goals for pollutants in groundwater considered a Source of Drinking Water shall be background water quality, but shall not be greater than DOHS drinking water Action Level (AL) or Maximum Contaminant Level (MCL), or levels set by the California Health and Welfare Agency pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1987 (Proposition 65). If an AL, MCL, or Proposition 65 level has not been established, the level shall be in accordance with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", and shall be based on an evaluation of the cost verses effectiveness, and a risk assessment to determine effects on human health and the environment. Groundwater (Drinking water and non-drinking water) cleanup levels shall have a goal of reducing the mobility, the toxicity, and the volume of pollutants, and shall be approved by the Board.

6. GROUNDWATER CONSERVATION: If groundwater extraction and treatment is considered as an alternative, the feasibility of water reuse, re-injection, and disposal to the sanitary sewer must be evaluated. Based on the regional Board Resolution 88-160, the Discharger shall optimize, with a goal of 100%, the reclamation or reuse of groundwater extracted as a result of cleanup activities. The Discharger shall not be found in violation of this Order if documented factors beyond the Dischargers' control prevent the Discharger from attaining this goal, provided the Discharger has made a good faith effort. If reuse or re-injection is part of a proposed alternative, an application for Waste Discharge Requirements may be required. If discharge to waters of the State is part of a proposed alternative, an application for an NPDES permit must be completed and submitted, and must include the evaluation of the feasibility of water reuse, re-injection, and disposal to the sanitary sewer.

C. PROVISIONS:

1. TIME SCHEDULE/TASKS: The Discharger shall comply with Prohibitions A.1., A.2. and A.3., and Specification B.1. and B.2., by completing the tasks outlined below in accordance with the following time schedule:

COMPLETION DATE/TASK:

a. COMPLETION DATE: September 30, 1990

TASK: SUBMIT A GROUNDWATER MONITORING PLAN: The Discharger shall review the existing groundwater monitoring program and shall propose, modifications as necessary to comply with this Order. This monitoring program shall be acceptable to the Board's Executive Officer. The proposed monitoring program shall include, but need not be limited to, the identification/location of sample wells, the frequency of water level and water quality sampling, and the identification of methods chosen for sample analysis.

b. COMPLETION DATE: October 30, 1990

TASK: EVALUATION OF POTENTIAL CONDUITS: Submit a technical report acceptable to the Executive Officer which contains the results of a potential conduit study. Any potential conduit should be included which would allow pollutants to migrate from the ground surface to groundwaters, and/or between water bearing zones.

c. COMPLETION DATE: November 15, 1990

TASK: EVALUATION OF KNOWN SHALLOW ZONE POLLUTION AND RECOMMENDED INTERIM REMEDIAL ACTIONS: Submit a technical report acceptable to the Executive Officer which reviews currently known groundwater pollution locations in the shallow zone at the Discharger's Site, or off-site, where pollutants exist because of actions previously conducted by the Discharger. The report shall also evaluate the various interim remedial alternatives available to minimize further water quality degradation in surface and groundwater, and recommend the preferred interim cleanup alternative, and a time schedule for implementation of the interim cleanup measures.

d. COMPLETION DATE: December 15, 1990

TASK: CLOSING OF POTENTIAL CONDUITS: Submit a technical report acceptable to the Executive Officer which documents the closing of any potential conduits as identified in Provision C.1.d. This technical report should include documentation on the types and quantities of materials used to seal each well, and/or the method of well destruction, as well as a description/location of the water bearing zones which were sealed.

e. COMPLETION DATE: January 15, 1991

TASK: SHALLOW ZONE CHARACTERIZATION STUDY: Submit a technical report acceptable to the Executive Officer which defines and includes the results of work performed to supplement and/or confirm the characterization of the extent of pollutants in the shallow zone soils and groundwater at the Site. Information from previous investigations should be summarized, evaluated, and submitted. All pertinent information the Discharger has collected regarding the shallow zone soils and groundwater should be included.

f. COMPLETION DATE: February 15, 1991

TASK: IMPLEMENTATION OF RECOMMENDED SHALLOW ZONE INTERIM REMEDIAL ACTIONS: Submit a technical report acceptable to the Executive Officer documenting completion of the implementation of the preferred remediation as selected in Provision C.1.b. The implementation includes but is not limited to engineering designs, equipment procurement, construction and installation, start up, and permitting.

g. COMPLETION DATE: April 15, 1991

TASK: NEWARK AQUIFER POLLUTION CHARACTERIZATION: Submit a technical report acceptable to the Executive Officer which defines and includes the results of work performed to supplement and/or confirm the characterization of the extent of pollutants in the Newark Aquifer existing at the Discharger's facility. This technical report shall contain a summary and evaluation of all information the Discharger has collected regarding any Newark Aquifer groundwater pollution at or adjacent to the Site.

h. COMPLETION DATE: May 15, 1991

TASK: SHALLOW ZONE CLEANUP PLAN / FEASIBILITY STUDY: Submit a technical report acceptable to the Executive Officer which will identify and discuss the shallow zone cleanup alternatives, their feasibility, and their costs and benefits in relation to beneficial use protection, and recommend the preferred cleanup alternative, and a time schedule for implementation of the cleanup measures. The report shall also specify a network of monitoring wells which will document the effectiveness which remediation of the shallow zone will have at this Site, and any influences which have or may occur on plume migration at adjacent sites.

i. COMPLETION DATE: June 15, 1991

TASK: NEWARK AQUIFER CLEANUP PLAN / FEASIBILITY STUDY: Submit a technical report acceptable to the Executive Officer which identify and discuss the Newark Aquifer cleanup alternatives in light of information collected in C.1.i., their feasibility, and their costs and benefits in relation to beneficial use protection. The report shall document and/or model the effectiveness which remediation of the Newark Aquifer will have at this Site and any influences which have or may occur on plume migration at adjacent sites.

j. COMPLETION DATE: November 15, 1991

TASK: IMPLEMENTATION OF SHALLOW ZONE REMEDIAL ALTERNATIVE(S): Submit a technical report acceptable to the Executive Officer documenting complete implementation of the preferred remediation as selected in Provision C.1.h. The implementation includes but is not limited to engineering designs, equipment procurement, construction and installation, start up, and permitting.

2. QUARTERLY REPORTS: On a quarterly basis, the Discharger shall submit a technical report one month following the end of each quarter, commencing with a report for the quarter ending September 15, 1990 and due October 15, 1990. These quarterly technical reports shall include, but need not be limited to, the results of updated groundwater quality sampling of on-site and off-site wells, updated water table and potentiometric surface maps for all affected water bearing zones, any updated cross-sectional geologic maps describing the hydrogeological setting, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and

identifying adjacent facilities and structures (including well locations at adjacent sites).

3. ANNUAL REPORTS: On an annual basis, for the previous calendar year, by the end of the second month following the calendar year, the Discharger shall submit an annual technical report acceptable to the Executive Officer which shall document and evaluate the progress of remedial actions. This report shall contain, but not be limited to, information on the number of gallons of groundwater pumped and treated, where the waters were discharged, changes in groundwater quality, changes in the monitoring network, problems encountered in the past year with implemented and/or proposed solutions, and projected cleanup anticipated for the coming year.

5. REPORT CERTIFICATION: All hydrogeological reports, documents, plans, and specifications, shall be certified by one of the following: a registered geologist, registered pursuant to Section 7850 of the Business and Professions Code; a certified engineering geologist, certified pursuant to Section 7842 of the Business and Professions Code; or a civil engineer registered pursuant to Section 6762 of the Business and Professions Code, who has at least five years experience in groundwater hydrology.

6. COMPLETION DATE DELAYS: If the Discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order for reasons beyond its reasonable control (permitting etc.), the Discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order extending the time for compliance for a reasonable period.

7. LABORATORY CERTIFICATION: All samples shall be analyzed by State DOHS certified laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

9. CONTROL SYSTEM MAINTENANCE: The Discharger shall maintain in good working order, and operate, as efficiently as reasonably possible, any facility or control system installed to achieve compliance with the requirements of this Order.

10. CORRESPONDENCE: Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:

    a. Alameda County Water District
    b. Alameda County Health Department
    c. City of Newark

d. State Department of Health Services/TSCD

11. ACCESS REQUIREMENTS: The Discharger shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:

a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

b. Access to copy any records required to be kept under the terms and conditions of this Order.

c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Discharger.

12. SITE OCCUPANCY/OWNERSHIP CHANGES: The Discharger shall file a report on any changes in Site occupancy and ownership associated with the facility described in this Order.

13. HAZARDOUS SUBSTANCE RELEASE REPORTING: If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the Discharger shall report such discharge to this Regional Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of the incident, cause of spill, Spill Prevention, Control, and Countermeasures Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

14. REVISION OF THE ORDER: The Board will review this Order periodically and revise the requirements as necessary to effectuate the intent of this Order in a prompt and reasonable manner, an example being the monitoring of plume containment upon commencement of ACWD's Salinity Barrier Project.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 15, 1990.

Steven R. Ritchie
Executive Officer

Attachments: Figure 1 Location Map
Figure 2 Site Map

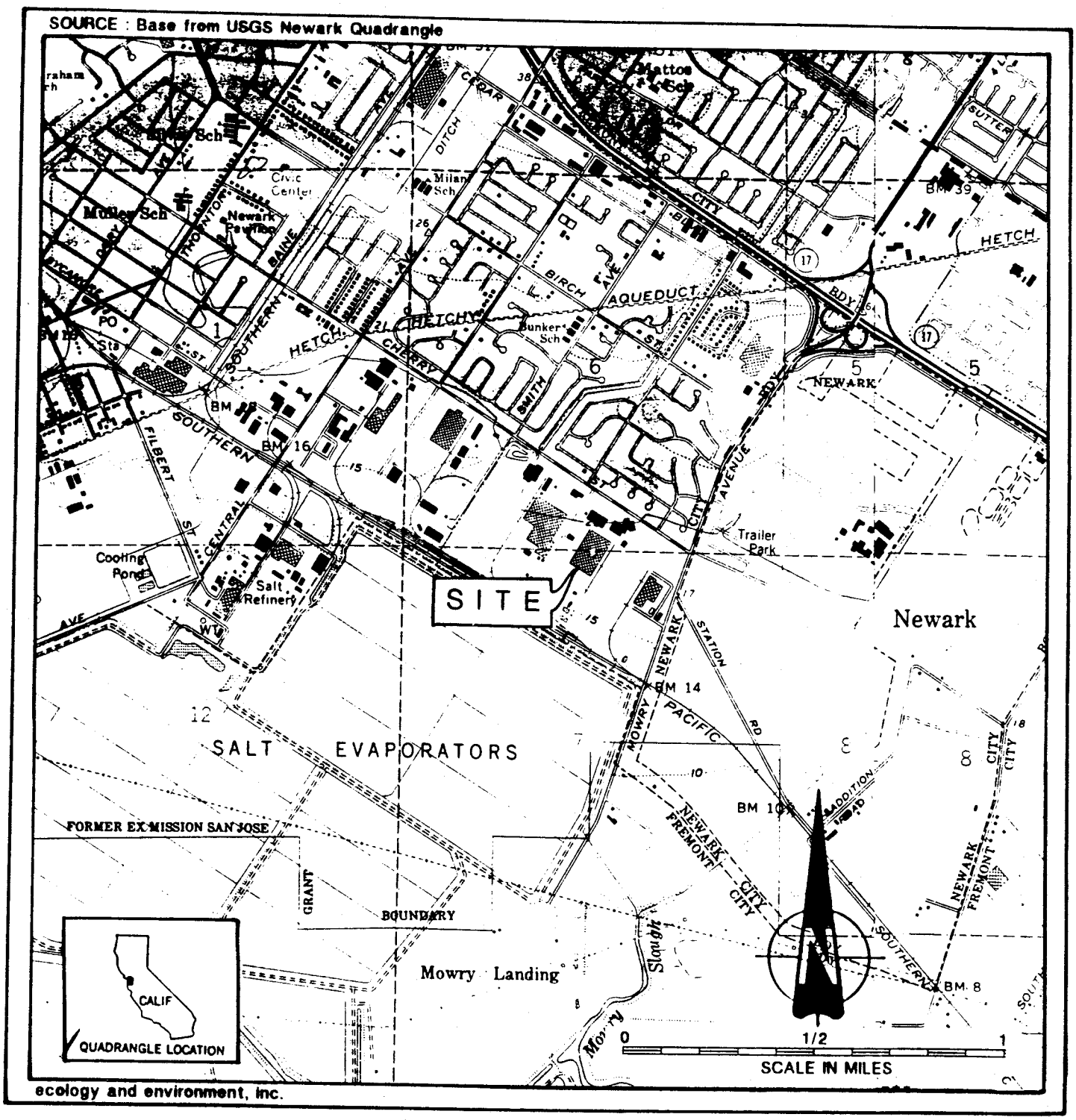

Figure 1 SITE LOCATION MAP
PETERBILT MOTORS COMPANY
38801 CHERRY STREET
NEWARK, CA 94560

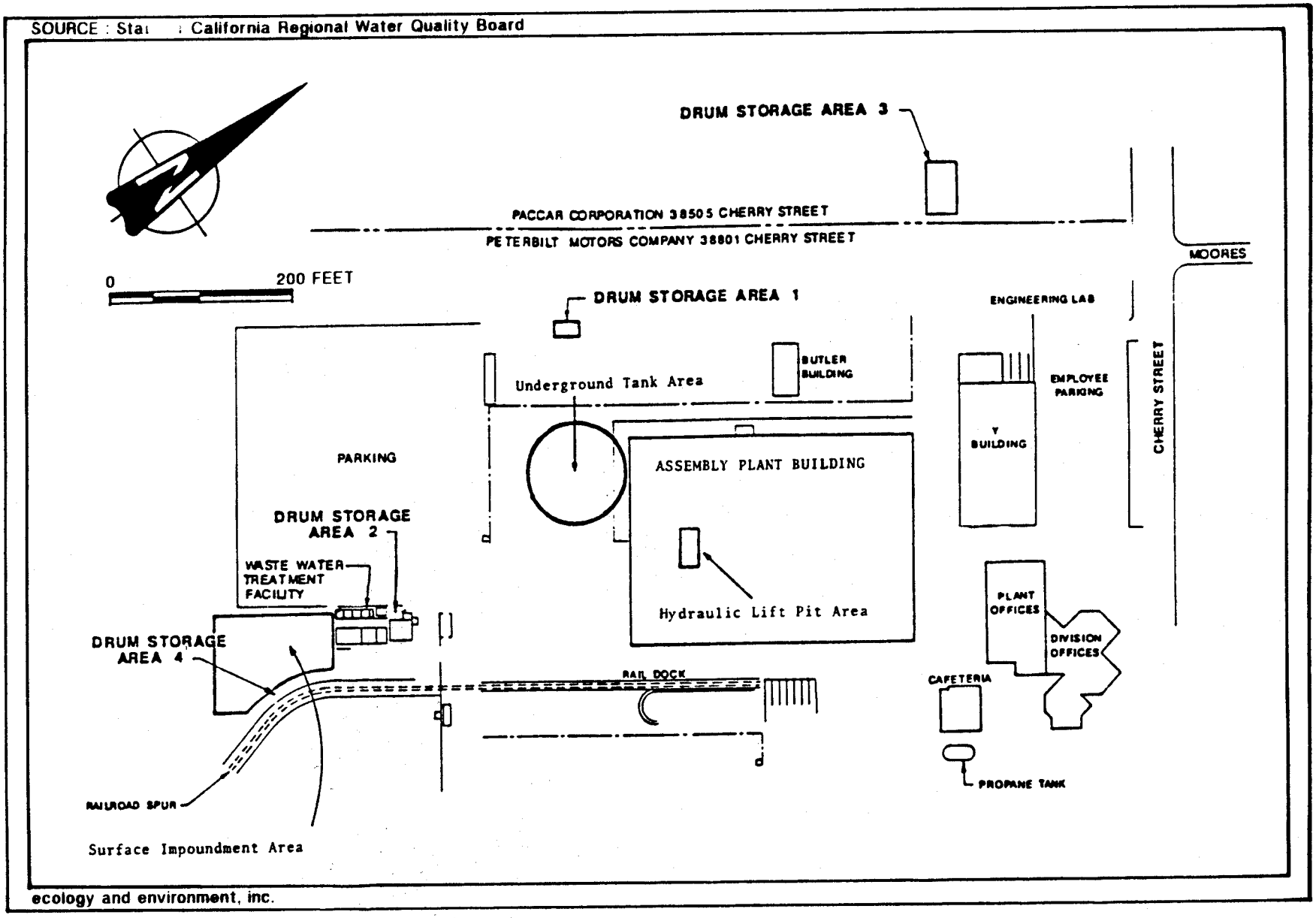

Figure 2 FACILITY MAP
PETERBUILT MOTORS COMPANY